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SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER
ELPENORD, CANDAL

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
		10/521,406	RAJAHALME, JARNO
Office Action Summary		Examiner	Art Unit
		Candal Elpenord	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *18 January 2005*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

ABSTRACT

1.   The abstract of the disclosure is objected to because of improper legal

phraseology "the" recited in line 2,4 and 5. Correction is required. See MPEP

§ 608.01(b).

2.   Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means" and "the," should be avoided. The
abstract should describe the disclosure sufficiently to assist readers in deciding whether
there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

Claim Objections

3.   **Claims 10 and 20** are objected to because of the following informalities:

Appropriate correction is required.

Regarding claim 10, the phrase "route optimization" seems to refer back to

"route optimization recited in claim 3, line 2. If it is true, it is suggested to applicant to

change "route optimization" to --the route optimization--. Similar problem exists for

claim 20, line 2.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1-2 and 11-12 are rejected under 35 U.S.C. 102 (e) as being anticipated

by Johansson et al (US 2002/0080752 A1)

Regarding claim 1, Johansson et al. discloses a routing method for routing data

packets ("optimization routing of datagrams, recited in paragraph 0068, lines 1-8 and

"traffic flow", recited in paragraph 0074, lines 1-13) from a source terminal (fig. 3a,

Mobile Node 3,recited in paragraph 0035, lines 1-7) (MN1, H1; Enx, Ex) to a destination

terminal (fig. 3a, Corresponding Node 4, recited in paragraph 0035, lines 1-7) (MN2, H2;

MN1, H1) via at least one communication network (fig. 3a; Home Network 9 and Visited

Subnetwork 8, recited in paragraph 0035, lines 3-7 and paragraph 0036, lines 1-8)

(NW1; NW1, NW2), the at least one communication network (fig. 3a, Home Network 9/

Visited Subnetwork 8, recited in paragraph 0035, lines 3-7 and paragraph 0036, lines 1-

8) comprising at least one mobility agent entity (fig. 3a, Home agent 1, Router 5a,

recited in paragraph 0067, lines 1-8, and paragraph 0036, lines 1-11) (HA1, HA2, AR1,

AR2, ERn, ERm) for each of the terminals (fig. 3a, Mobile nodes and Corresponding

Nodes, recited in paragraphs 0068 and 0035), the method comprising the steps of:

establishing a route ("route advertisement using the open shortest path", recited in

paragraph 0077, lines 1-17) (1, 2, 3, 4; 4, 5, 6, 7) from the source (fig. 3a –3b, Mobile

Node 3,recited in paragraph 0035, lines 1-7) (MN1, H1; Ex, ENx) via at least one first

mobility agent ("router 5a for traffic sent from/to the corresponding nodes", recited in

paragraph 0036, lines 1-6) (AR1; ERn) associated to the source (fig. 3a –3b, Mobile

Node 3,recited in paragraph 0035, lines 1-7), at least two consecutively arranged

second mobility agents (fig. 3a and 3b, Agents 1 and 2b, Mobile IP Tunnel 30a, recited

in paragraph 0074, lines 1-13 and paragraph 0077, lines 1-17) (HA2, AR2; HA1, AR1)

associated to the destination (fig. 3a, Corresponding Node 4, recited in paragraph 0035,

lines 1-7) (MN2, H2; MN1, H1), deciding that the route is to be optimized ("route

optimization and datagrams can be routed between corresponding nodes and Home

Agent" recited in paragraph 0068, lines 1-8 and "mobile node entering the visited

network", recited in paragraph 0107, lines 1-15), and upon the decision ("routing traffic

directly", recited in paragraph 0077, lines 1-3), rerouting the route from one of the at

least one first mobility agents ("setting direct static direct route between mobile node

and corresponding node", recited in paragraph 0075, lines 1-9) (AR1; ERn) directly to

one of the at least two consecutively arranged second mobility agents (fig. 3a and 3b,

Agents 1 and 2b, Mobile IP Tunnel 30a, recited in paragraph 0074, lines 1-13 and

paragraph 0077, lines 1-17) (AR2; AR1) such that at least one intermediate mobility

agent ("without going to the Home agent", recited in paragraph 068, lines 1-8-the

bypassed home agent is the intermediate mobility agent) (HA2; HA1) in the route is

bypassed in the resulting rerouted route ("no awareness of the mobile IP when forwarding traffic between Mobile node and Corresponding Node", recited in paragraph 0066, lines 1-5 and "bypassing the mobile node's home agent", recited in paragraph 0020, lines 1-8 and paragraph 0021-the route to the home agent/network is therefore bypassed)

Regarding claim 2, Johansson et al. discloses a method ("optimization routing of datagrams, recited in paragraph 0068, lines 1-8 and "traffic flow", recited in paragraph 0074, lines 1-13), wherein the decision ("mobile node entering the visited network", recited in paragraph 0107, lines 1-15-the decision is made after registering the care-of-address with home agent network), is taken at one of the at least two second mobility agents (fig. 3a and 3b, Agents 1 and 2b, Mobile IP Tunnel 30a, recited in paragraph 0074, lines 1-13 and paragraph 0077, lines 1-17) (HA2, HA1) associated to the destination (fig. 3a, Corresponding Node 4, recited in paragraph 0035, lines 1-7).

Similarly, **claims 11-12** are rejected for the same reasons as claims 1-2 since they have the same limitations.

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

8.   **Claims 1-2 and 11-12** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Leung et al (US 6,195,705 B1). in view of Ramjee et al (US

6,842,246 B1).

Regarding claim 1-2, Leung et al. discloses a routing method ("routing of data

packets", recited in col. 6-7, lines 65-67 and lines 1-6 and "router", recited in col. 5, lines

34-47) for routing data packets from a source terminal (fig. 2A, Mobile nodes 6 and 27,

recited in col.) to a destination terminal (fig. 2A, Corresponding Node 18, recited) via at

least one communication network (fig. 2A, Network Segment 12, recited in col. 6, lines

48-54) the at least one communication network (fig. 2A, Network Segment 12, recited in

col. 6, lines 48-54)   comprising at least one mobility agent entity (fig. 2A, Routers, HA V

25, HA 1 8, HA 2 21, HA 3 23, recited in col. 7, lines 1-15) for each of the terminals (fig.

2A, source and destination terminals, recited in col. 6, lines 48-56), the method ("routing

of data packets", recited in col. 6-7, lines 65-67 and lines 1-6 and "router", recited in col.

5, lines 34-47) comprising the steps of: establishing a route ("receiving a registration

request from the foreign agent and authentication", recited in col. 10, lines 26-56 and

"care-of-address of mobile node", recited in col. 11, lines 7-23) from the source (fig. 2A,

Mobile Node 6, 27, recited in col.) via at least one first mobility agent (fig. 2A, HA 3 23,

recited in col. 7, lines 50-59) associated to the source (fig. 2A, Mobile Node 6,27,

recited in col. 6, lines 48-56) at least two consecutively arranged second mobility agents

(fig. 2A, Foreign Agent 10, recited in col. 8, lines 34-43) associated to the destination

(fig. 2A, Corresponding Node 18), to the destination (fig. 2A, Packet going from MNs to

destination "corresponding Node"), regarding claim 2, a method ("routing of data

packets", recited in col. 6-7, lines 65-67 and lines 1-6 and "router", recited in col. 5, lines

34-47), wherein the decision ("receiving a registration request from the foreign agent

and authentication", recited in col. 10, lines 26-56 and "care-of-address of mobile node",

recited in col. 11, lines 7-23-decision regarding routing or tunneling is taken) is taken at

one of the at least two second mobility agents (fig. 2A, Foreign Agent 10, recited in col.

8, lines 34-43) associated to the destination (fig. 2A, Corresponding Node 18 and fig.

2B).

Leung et al. discloses all the subject matter of the claimed invention with the

exception of being silent in regard to the at least one intermediate mobility agent (HA2;

HA 1) in the route is bypassed in the resulting rerouted route. However, Ramjee et al in

a similar field of endeavor discloses the method ("registration when a mobile device

moves to different areas covered by VLR, recited in col. 6, lines 5-25), deciding that the

route is to be optimized ("routing directly to the root domain router and established path

to mobile device", recited in col. 4, lines 27-44), and upon the decision ("routing away

from home", recited in col. 4, lines 1-6) rerouting the route ("route optimization in which

the mobile home agent is bypassed", recited in col. 4, lines 1-13). (from one of the at

least one first mobility agents (fig. 1, Access Router 114, recited in col. 3, lines 23-38)

directly to one of the at least two consecutively arranged second mobility agents (fig. 2,

Root Domain router R6 or Foreign Domain, recited in col. 5, lines 5-16) such that at

least one intermediate mobility agent (fig. 2 Domain 1, Root Router HA 210.) in the

route is bypassed in the resulting rerouted route ("route optimization in which the mobile

home agent is bypassed", recited in col. 4, lines 1-13). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify

the features of Leung et al. by using features as taught by Leung in order to minimized

handoff notifications and routing efficiency (See col. 4, lines 45-59 for motivation).

     Claims 11-12 are rejected for the same reasons as **claims 1-2** since they have

the same limitations.

9.   **Claims 3-8 and 13-18** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Johansson et al (US 2002/0080752 A1) in view of Forslow et al (US

6973,057 B1).

     Johansson et al. discloses all the subject matter of the claimed invention with the

exception of being silent with regard to the following features: **Regarding claim 3**, a

method, wherein the decision is based on an indication by the source or destination to

optimize the route or to request for a specific quality of service for which route

optimization is beneficial, **regarding claim 4**, a method wherein the decision is based

on a service type of the traffic between the source and the destination, **regarding claim

5**, a method, wherein the decision to optimize the route is taken in case the service type

indicates a service imposing delay Requirements, **regarding claim 6**, a method),

wherein the service type indicates real-time traffic, **regarding claim 7**, a method

wherein the decision is based on an estimated benefit from route optimization between

the source and the terminal, and in case the estimated benefit exceeds a predetermined

threshold value it is decided to reroute the route, **regarding claim 8**, a method, wherein

the rerouting comprises the steps of informing one of the at least one first mobility

agents of a current care_of_address of the destination. However, Forslow et al. in a

similar field of endeavor disclose the following: **regarding claim 3**, Forslow discloses a

method ("mobile node data access", recited in abstract, lines 1-10), wherein the

decision ("selective routing and optimal routing", recited in col. 5, lines 50-64) is based

on an indication by the source (fig. 1, Mobile Node 14, recited in col. 7, lines 28-33) or

destination (fig. 1, Mobile Node 14, recited in col. 7, lines 28-33) to optimize the route

("optimal routing based on particular quality of service", recited in col. 5, lines 50-64 and

"bypassing of IP data packet routing mechanism", recited in col. 9, lines 34-41)

("configure tunnel in accordance with a quality of service parameters", recited in col. 3,

lines 58-64) or to request for a specific quality of for which route optimization is

beneficial ("optimal routing based on particular quality of service", recited in col. 5, lines

50-64 and "bypassing of IP data packet routing mechanism", recited in col. 9, lines 34-

41), **regarding claim 4**, a method ("mobile node data access", recited in abstract, lines

1-10) wherein the decision is based on a service type of the traffic ("quality /class of

service to be taken into account in mobile IP/Internet communications", recited in col.

15, lines 52-61) between the source (fig. 1, Mobile Node 14, recited in col. 7, lines 28-

33) and the destination (fig. 1, Corresponding Node 28, recited in col. 7, lines 58-65),

regarding claim 5, a method ("mobile node data access", recited in abstract, lines 1-

10), wherein the decision to optimize the route is taken in case the service type

("service level corresponding to the mobile user request", recited in col. 16, lines 3-14)

indicates a service imposing delay Requirements ("requires low delay", recited in col.

15-16, lines 63-67 and lines 1-2), **regarding claim 6**, a method ("mobile node data

access", recited in abstract, lines 1-10), wherein the service type ("traffic type", recited in

col. 15, lines 63) indicates real-time traffic ("Voice –Over-IP", recited in col. 15, lines 59-

67 and col. 16, lines 1-2), **regarding claim 7**, a method ("mobile node data access",

recited in abstract, lines 1-10), wherein the decision ("selective routing and optimal

routing", recited in col. 5, lines 50-64) is based on an estimated benefit from route

optimization between the source (fig. 1, Mobile Node 14, recited in col. 7, lines 28-33)

and the terminal (fig. 1, Corresponding Node 28, recited in col. 7, lines 58-65), and in

case the estimated benefit ("coloring to provide quality of service and defined of admin

values with respect to bandwidth", recited in col. 16, lines 46-56) exceeds a

predetermined threshold value ("high traffic that is more than one label-switched path",

recited in col. 17, lines 4-9), it is decided to reroute ("bypassing of IP data packet routing

mechanism", recited in col. 9, lines 34-41) the route ("load balancing between label-

switched paths to avoid congestion and routes through secondary paths", recited in col.

17, lines 9-30), **regarding claim 8**, a method ("mobile node data access", recited in

abstract; lines 1-10), wherein the rerouting comprises the steps of informing one of the

at least one first mobility agents (fig. 1, Foreign Agent Router, recited in col. 8, lines 32-

44) of a current care_of_address of the destination ("received care-of-address of

mobile node, recited in col. 8, lines 32-59). Therefore, it would have been obvious to

one of ordinary skill in the art at the time the invention was to modify the features of

Johansson et al. by using features as taught by Forslow et al in order to provide routing

efficiency and routing redundancy (See col. 19, lines 41-57 for motivation).

Regarding claims 13-18, they are rejected for the same reasons as claims 3-8.

10.   **Claims 3-4,6, and 8-10, 13-14, 16, and 18-20** are rejected under 35 U.S.C.

103(a) as being unpatentable over Johansson et al (US 2002/0080752 A1) in view of

Karagiannis et al (US 2002/0015395 A1). Johansson discloses all the subject matter of

the claimed invention with the exception of being silent with regard to the following

features: **regarding claim 3**, a method, wherein the decision is based on an indication

by the source or destination to optimize the route or to request for a specific quality of

service for which route optimization is beneficial, **regarding claim 4**, a method, wherein

the decision is based on a service type of the traffic between the source and the

destination, **regarding claim 6**, a method, wherein the service type indicates real-time

traffic **regarding claim 8**, a method, wherein the rerouting comprises the steps of

informing one of the at least one first mobility agents of a current care_of_address of the

destination, **regarding claim 9**, a method, wherein the informing comprises the steps of

sending a message from one of the consecutively arranged second mobility agents to

one of the first mobility agents including the current care_of_address of the destination,

regarding claim 10, a method, wherein the indication triggering the deciding for the

route optimization is included in a source reservation signaling. However, Karagiannis

et al in a similar field of endeavor discloses the following: **regarding claim 3**, a method

("real-time packet session using RSVP", recited in abstract, lines 1-11), wherein the

decision ("direct routing between the corresponding host and the mobile node after

binding update message", recited in paragraph 0045, lines 1-12) is based on an

indication by the source (fig. 3, Mobile Node 102, recited in paragraph 0040, lines 1-9)

or destination (fig. 3, Corresponding Host 108, recited in paragraph 0040, lines 1-9) to

optimize the route (fig. 6, route optimization, recited in paragraph 0067, lines 1-13) or to

request (RSVP RESV 310 request, recited in paragraph) for a specific quality of service

(path established upon QoS requirements, recited in paragraph 0066, lines 1-11) for

which route optimization is beneficial ("avoiding triangular routing", recited in paragraph

0066, lines 1-11), **regarding claim 4**, a method ("real-time packet session using

RSVP", recited in abstract, lines 1-11), wherein the decision ("direct routing between the

corresponding host and the mobile node after binding update message", recited in

paragraph 0045, lines 1-12) is based on a service type of the traffic ("quality of service

requirement", recited in paragraph, 0043, lines 1-12) between the source (fig. 3, Mobile

Node 102, recited in paragraph 0040, lines 1-9) and the destination (fig. 3, Mobile Node

102, recited in paragraph 0040, lines 1-9), **regarding claim 6**, a method ("real-time

packet session using RSVP", recited in abstract, lines 1-11) , wherein the service type

("quality of service requirement", recited in paragraph, 0043, lines 1-12) indicates real-

time traffic ("real-time packet optimization routing", recited in paragraph 0067-0068),

regarding claim 8, a method ("real-time packet session using RSVP", recited in

abstract, lines 1-11), wherein the rerouting ("bypassing of the home agent of the mobile node", recited in paragraph 0063, lines 1-21) comprises the steps of informing one of the at least one first mobility agents ("sending binding update message to the corresponding host by the home agent", recited in paragraph 0063, lines 1-21) of a current care_of_address of the destination ("care-of- address of the mobile node, recited in paragraph 0063, lines 1-21), **regarding claim 9**, a method ("real-time packet session using RSVP", recited in abstract, lines 1-11), wherein the informing comprises the steps of sending a message ("binding update message sent by the Home Agent in response to binding request from the Foreign Agent", recited in paragraph 0029, lines 1-9) from one of the consecutively arranged second mobility agents (fig. 3, Home Agent 106) to one of the first mobility agents (fig. 3, Foreign Agent 104) including the current care_of_address of the destination ("care-of-address of the mobile node", recited in paragraph 0029, lines 1-9) **regarding claim 10**, a method ("real-time packet session using RSVP", recited in abstract, lines 1-11), wherein the indication ("receiving binding request", recited in paragraph 0028, lines 1-10) triggering the deciding for the route optimization ("route-optimization using binding request and update message, recited in paragraph 0029, lines 1-9) is included in a source reservation signaling ("path message and reservation request", recited in paragraph 0029, lines 1-9 and "RSVP message path", recited in paragraph 0042, lines 5-13 and "RRSVP RESV", recited in paragraph 0057). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was to modify the features of Johansson et al. by using features as

taught by Karagiannis et al in order to provide routing efficiency with respect to real-time

packet data optimization through RSVP (See paragraph 0026, lines 2-20 for motivation).

Similarly, **claims 13-14, 16, and 18-20** are rejected for the same reasons as

claims 3-4,6, and 8-10.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Gwon et al (US 2003/0016655 A1), Leung et al (US 7,227,863

B1), and Crosbie et al (US 7,260,638 B2) are cited to show methods and system related
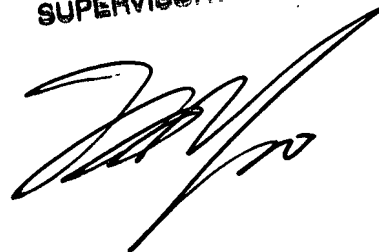
to the claimed invention.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Candal Elpenord whose telephone number is (571) 270-

3123. The examiner can normally be reached on Monday through Friday 7:30AM to

5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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CE

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER